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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/416,368	10/12/1999	DAVID J. CORISIS	3770.2US-(97	6085

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EXAMINER
GRAYBILL, DAVID E

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 03/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/416,368	CORISIS ET AL.	
	Examiner	Art Unit	
	David E Graybill	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 18-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4 and 18-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *15,17,20* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

In order to continue to afford applicant the benefit of compact prosecution, and in view of the newly discovered cited prior art, the restriction requirements set forth in the Office actions mailed 5-3-2 and 12-31-2 are withdrawn, the allowability of claims 3 and 4 is withdrawn, and claims 1, 3, 4, and 18-26 are examined on the merits.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "202" and "200" appear to have both been used to designate one of the "plurality of conductors." A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations of the species of claims 1 and 23, "a lead frame having a plurality of conductors and at least one alignment feature electrically isolated from the plurality of conductors," "removing the at least one alignment feature," and, "coupling at least some of the plurality of conductors to a semiconductor die," the limitation of the species of claim 23, "coupling the at least one alignment feature with a portion of a testing device; testing the

integrated circuit package through at least some of the electrically coupled conductors; decoupling the at least one alignment feature from the portion of the testing device," and the features of claim 21, must be shown or the features canceled from the claims. In order to continue to afford applicant the benefit of compact prosecution, it is noted that the present illustrations of some of these individual limitations do not show every feature of the invention specified in the claims because the illustrations are drawn to species other than the species of claims 1, 21 and 23.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 18-23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in

the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claims 1 and 23, the limitations, "a lead frame having a plurality of conductors and at least one alignment feature electrically isolated from the plurality of conductors," and, "removing the at least one alignment feature," are not enabled. Specifically, the limitation, "a lead frame having a plurality of conductors and at least one alignment feature" suggests that the lead frame, conductors and at least one alignment feature are integral; indeed, at page 3, lines 25-27, the specification discloses, "a conductive apparatus has an alignment feature integral therewith. In one embodiment, the conductive apparatus comprises a lead frame and the alignment feature comprises an alignment tab," but the means by which the alignment feature is made integral with and electrically isolated from the lead frame is not disclosed, and cannot otherwise be determined. Further, the specification discloses that the alignment feature is "removably coupled with the lead frame 200," and, "To remove the alignment tab 210 shown in FIG. 2, the alignment tab 210 is folded about the separation line 240. The alignment tab 210 is folded back over the separation line 240 until the material connecting the alignment tab 210 to the lead frame 200 is severed or disconnected." However, the claims 1 and 23

limitation, "removing the at least one alignment feature," is not enabled because "the material [or means] connecting the alignment [feature]" is not disclosed, and cannot otherwise be determined.

Claims 1 and 18-23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The undescribed subject matter is the claims 1 and 23 combination of limitations "a lead frame having a plurality of conductors and at least one alignment feature electrically isolated from the plurality of conductors," and, "removing the at least one alignment feature."

To further clarify, to determine adequacy of written description for original claims MPEP 2163IIA2(a) (redacted) instructs:

> (i) For Each Claim Drawn to a Single Embodiment Or Species:
> (A) Determine whether the application describes an actual reduction to practice of the claimed invention.
> (B) If the application does not describe an actual reduction to practice, determine whether the invention is complete as evidenced by a reduction to drawings or structural chemical formulas that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole.
> (C) If the application does not describe an actual reduction to practice or reduction to drawings or structural chemical formula as discussed above, determine whether the invention has been set forth in terms of distinguishing identifying characteristics as evidenced by other descriptions of the invention that are sufficiently detailed to show that applicant was in possession of the claimed invention.
> (1) Determine whether the application as filed describes the complete structure (or acts of a process) of the claimed invention as a whole.

(2) If the application as filed does not disclose the complete structure (or acts of a process) of the claimed invention as a whole, determine whether the specification discloses other relevant identifying characteristics sufficient to describe the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize applicant was in possession of the claimed invention. Any claim to a species that does not meet the test described under at least one of (a), (b), or (c) must be rejected as lacking adequate written description under 35 U.S.C. 112, para. 1.
ii) For each claim drawn to a genus:

Regarding claims 1 and 18-23, the instant application does not describe an actual reduction to practice of the claimed invention; the invention is not complete as evidenced by a reduction to drawings or structural chemical formulas that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole; the invention has not been set forth in terms of distinguishing identifying characteristics as evidenced by other descriptions of the invention that are sufficiently detailed to show that applicant was in possession of the claimed invention; the application as filed does not describe the complete structure of the claimed invention as a whole; and the specification does not disclose other relevant identifying characteristics sufficient to describe the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize applicant was in possession of the claimed invention.

Claims 1 and 18-23 have not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections supra, there is a great deal of confusion and uncertainty as to the

proper interpretation of the limitations of the claims; hence, it would not be proper to reject the claims on the basis of prior art. As stated in In re Steele, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims. See also MPEP 2173.06.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3, 4 and 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato (5728601).

At column 4, line 29 to column 8, line 31, Sato teaches the following:

3. A method of forming an integrated circuit package, the method comprising: providing a plurality of conductors 24 and at least one alignment feature 23b; coupling 27 at least some of the plurality of conductors to a semiconductor die 25; and

encompassing the semiconductor die, a portion of each of the plurality of conductors, and substantially encompassing the at least one alignment feature with an insulating material 21.

4. A method of forming and testing an integrated circuit package, the method comprising: providing a plurality of conductors and at least one alignment feature; electrically coupling at least some of the plurality of conductors to a semiconductor die; encompassing the semiconductor die, a portion of each of the plurality of conductors, and substantially encompassing the at least one alignment feature with an insulating material; coupling the at least one alignment feature encompassed by the insulating material with a portion of a testing device ["conductor pattern provided on the substrate that may be a printed circuit board"]; and testing the integrated circuit package through at least some of the electrically coupled conductors.

24. The method according to claim 3, further comprising forming the at least one alignment feature to include an alignment cut-out.

25. The method according to claim 3, further comprising providing a heat spreader 23 and forming the at least one alignment feature in the heat spreader.

26. The method according to claim 3, further comprising providing a tie bar 23a and forming the at least one alignment feature in the tie bar.

To further clarify the teaching of testing the integrated circuit package through at least some of the electrically coupled conductors, it is noted that it is inherent in the process of electrically coupling the conductors to the circuit board and attempting to operate the package, that the package is put to a test of operability; it must operate (and to some degree of operability) or fail to operate, therefore, it is inherently tested.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

In the alternative, claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato as applied to claim 4 supra, and further in combination with King (6420195).

Because Sato does not appear to literally teach coupling the at least one alignment feature encompassed by the insulating material with a portion of a testing device; and testing the integrated circuit package through at least some of the electrically coupled conductors, in the alternative, claim 4 is rejected over the combination of Sato and King.

At column 1, line 62 to column 7, line 65, King teaches coupling at least one alignment feature 50 encompassed by insulating material 46 with a portion 58 of a testing device 56; and testing an integrated circuit package 40 through at least some electrically coupled conductors 44.

Moreover, it would have been obvious to combine the process of King with the process of Sato because it would enable package testing and improve manufacturing quality.

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is 703/308-7722.

David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
28-Feb-03